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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,007	07/30/2001	Kazunobu Kubota	7217/65184	1045

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COOPER & DUNHAM LLP  
1185 Avenue of the Americas  
New York, NY 10036

EXAMINER	
FAULK, DEVONA E	
ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/918,007	<b>Applicant(s)</b> KUBOTA, KAZUNOBU	
	<b>Examiner</b> Devona E. Faulk	<b>Art Unit</b> 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,8,9,12-14,20,21,24-26,32,33,36-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,8,9,12-14,20,21,24-26,32,33 and 36-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed 10/3/2005, with respect to the rejection(s) of claim(s) 1,2,8,9,12-14,20,21,24-26,32,33,36-39,13-23, 25-35 and 37-39 under 102(b) and 103(a), regarding the amended claim language, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Mayer.
2. Applicant's arguments filed 10/3/2005 have been fully considered but they are not persuasive. The applicant asserts on page 20, that in the admitted prior art there is no prescribed time unit. The examiner asserts that a time unit is implicit.
3. Claims 3-7,10,11,15-19,22,23,27-31,34,35 were withdrawn from consideration because they were drawn to a non-elected species in a previous office action.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims **1,2,8,13,14,20,25,26,32,37-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Mayer et al. (US 4,296,476).

Claims **1, 13 and 25** share common elements.

Regarding **claims 1,13 and 25**, the applicant's admitted prior art discloses an audio signal processing method ((abstract) that performs virtual acoustic image localization processing of audio signals based on at least one type of information among position information, movement information, and localization information (pages 1-3, Description of Related Art; Figure 4), the method comprising the steps of:

when there are a plurality of changes in said information within a prescribed unit of time, generating an information change based on said plurality of information changes (1, Figure 4; page 3, Description of Related Art; The applicant's admitted prior art, Figure 7 teaches of a plurality of changes (position,movement) in what is implicitly some time frame. The applicant's admitted prior art teaches that localization processing of a plurality of virtual acoustic images is performed within the audio processing unit each time there is a change in the position or movement information and that the position and movement information is used to perform virtual acoustic image localization. Each time denotes a given time unit. For a given time unit one change in position or movement generates a single information) ; and

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performing virtual acoustic image localization processing for said audio signals based on said generated information change (pages 1-3, Description of Related Art).

The applicant's admitted prior art fails to disclose but Mayer teaches of generating a single change at the end of a prescribed unit of time (column 24, lines 26-35; Mayer discloses a data processing system with programmable graphics generators and teaches of waiting until the end of a next vertical blanking interval before transferring a next instruction after a jump instruction (see column 23, line 64- column 24, line 5)).

It would have been obvious to modify the applicant's admitted prior art so that a single change is made at the end of a time unit as taught by Mayer in order to better control the playfield objects that are generated in response to and under the supervision of the instruction set (column 24, lines 48-52).

Regarding **claims 8, 20 and 32**, it is implicit to digital processing that the time unit is an integral multiple of the sampling period of said digital signals.

6. **Claims 37-39** share common features.

Regarding **claims 37-39** the applicant's admitted prior art discloses an audio signal processing apparatus (Figure 1), comprising:

an audio signal processing unit for performing virtual acoustic image localization processing of audio signals based on at least one information type among position information, movement information, and localization information (2, Figure 4); and

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information change generation means for generating, when a plurality of changes are made to said information within a prescribed time unit, one information change within said prescribed time unit based on said plurality of information changes (1, Figure 4; page 3, Description of Related Art; The applicant's admitted prior art, Figure 7 teaches of a plurality of changes in what is implicitly some time frame. For each change, audio processing must be changed. The applicant's admitted prior art teaches that localization processing of a plurality of virtual acoustic images is performed within the audio processing unit each time there is a change in the position or movement information and that the position and movement information is used to perform virtual acoustic image localization. Each time denotes a given time unit. For a given time unit one change in position or movement generates a single information.), wherein

said audio processing unit is controlled based on the information change generated by said information change generation means, to perform virtual acoustic image localization processing of said audio signals (pages 1-2, Description of Related Art) .

Regarding claim 39, the applicant's admitted prior art further discloses a storage means (3, Figure 4) for storing a plurality of synthesized audio signals obtained from localization processing.

The applicant's admitted prior art fails to disclose but Mayer teaches of generating a single change at the end of a prescribed unit of time (column 24, lines 26-35; Mayer discloses a data processing system with programmable graphics generators and teaches of waiting until the end of a next vertical

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blanking interval before transferring a next instruction after a jump instruction (see column 23, line 64- column 24, line 5)).

It would have been obvious to modify the applicant's admitted prior art so that a single change is made at the end of a time unit as taught by Mayer in order to better control the playfield objects that are generated in response to and under the supervision of the instruction set (column 24, lines 48-52).

Regarding **claims 2,14 and 26**, applicant's admitted prior art as modified by Mayer fails to explicitly teach wherein the step of generating a single information change is performed using only a last one of said information elements presented within said time unit. For a given time unit one change in position or movement generates a single information. Last is defined as most recent. This one change reads on last information change. It would have been obvious to generate a single information change using only the information presented last within said time unit to reproduce virtual image localization information using the most recent data.

6. 7. **Claims 12,24, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (Pages 1-4, Description of Related Art; Figure 4) in view of Mayer et al. (US 4,296,476) in further view of Inanaga et al. (US 5,796,843).

Regarding **claims 12,24 and 36**, the applicant's admitted prior art as modified by Mayer fails to disclose but Inanaga teaches of wherein the information for said audio signals can be modified according to user operations. The applicant's admitted prior art teaches of a game and that position,

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movement, fluctuation, other control information is received from external equipment (Figure 4) but fails to disclose that information for said audio signals can be modified according to user operations. Inanaga discloses a video signal and audio signal reproducing apparatus that corrects an audio signal with respect to a relative movement of user and a head movement of the listener with respect to a virtual sound source from a video reproducing means (column 4, lines 15-20). It would have been obvious to modify the applicant's admitted prior art so that information for the audio signals can be modified according to user operations as taught by Inanaga in order to reproduce virtual localization information in real time.

8. **Claims 9,21,33** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (Pages 1-4, Description of Related Art; Figure 4) in view of Mayer et al. (US 4,296,476) in further view of Harigaya et al. (US 5,583,791).

Regarding **claims 9,21 and 33**, the applicant's admitted prior art as modified by Mayer fails to disclose but Harigaya teaches of wherein said time unit is of variable length. Inanaga discloses audio processing and there is obviously a time unit but fails to disclose that the time unit is of variable length. Harigaya discloses an audio/video recording-reproducing apparatus using variable length coding (column 11, lines 12-16). It would have been obvious to vary the period using variable length coding as taught by Harigaya in order to process more data per period.



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***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DEF



HUYEN LE  
PRIMARY EXAMINER